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AMSAT NEWS SERVICE
ANS-071

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The AMSAT News Service bulletins are a free, weekly news and information service of AMSAT, The Radio Amateur Satellite Corporation. ANS publishes news related to Amateur Radio in Space including reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

The news feed on http://www.amsat.org publishes news of Amateur Radio in Space as soon as our volunteers can post it.

Please send any amateur satellite news or reports to: ans-editor [at] amsat.org

You can sign up for free e-mail delivery of the AMSAT News Service Bulletins via the ANS List; to join this list see: https://mailman.amsat.org/postorius/lists/ans.amsat.org/

ANS-071 AMSAT News Service Weekly Bulletins

To: All RADIO AMATEURS
From: Radio Amateur Satellite Corporation
712 H Street NE, Suite 1653
Washington, DC 20002

DATE 2023 Mar 12

AMSAT Recognized for Educational Support

Escuela Técnica Superior de Ingeniería Aeronáutica y del Espacio of Universidad Politecnica de Madrid, Spain has recognized and thanked the members of AMSAT who have supported their educational endeavors by collecting telemetry data downloaded from the UPMSat-2 satellite around the globe.

Dr. Rafael García Romero, EA4BPN, along with project director Dr. Elena Roibas and team member Dr. Angel Sanz Andres, penned the letter of recognition dated February 17, 2023 and recently received by AMSAT. The letter reads:

"On the celebration of UPMSat-2 launch date anniversary of the second year in orbit, UPMSat-2 team would like to thank AMSAT for its support to the satellite downlink data gathering.

"The effort of AMSAT members is seen at IDR as a valuable 'citizen science' contribution to our project and is gratefully acknowledged.

"We expect that the UPMSat-2 will continue to work for another two years, therefore, it would bring an opportunity to continue with this fruitful collaboration.

"With our best regards, we wish all the best for AMSAT members."

UPMSat-2 sends 2-FSK data at 2400bps, with transmitted power of approximately 2.5 watts, on 437.405 MHz. Originally scheduled to launch in 1999, it was finally launched on September 3, 2020 from the Guiana Space Centre in Kourou, French Guiana. Launched on the flight VV16 of the Vega rocket, it entered a sun-synchronous orbit with an altitude of approximately 518 km.

[ANS thanks Rafael García, EA4BPN, for the above information]

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go to https://www.ardc.net.

[ANS thanks ARDC for the above information]

Radio Interference From Satellites Threatening Astronomy

Radio telescopes are facing a problem. All satellites, whatever their function, use radio waves to transmit information to the surface of the Earth. Just as light pollution can hide a starry night sky, radio transmissions can swamp out the radio waves astronomers use to learn about black holes, newly forming stars and the evolution of galaxies.

In a paper published March 3,2023, Christopher Gordon De Pree, Deputy Electromagnetic Spectrum Manager, National Radio Astronomy Observatory; Christopher R. Anderson, Associate Professor of Electrical Engineering at the United States Naval Academy; and Mariya Zheleva, Assistant Professor of Computer Science, University at Albany, State University of New York, call for creation of a national radio dynamic zone.

This zone would be similar to existing radio quiet zones, covering a large area with restrictions on radio transmissions nearby. Unlike a quiet zone, the facility would be outfitted with sensitive spectrum monitors that would allow astronomers, satellite companies and technology developers to test receivers and transmitters together at large scales. The goal would be to support creative and cooperative uses of the radio spectrum.

As the problem of radio pollution continues to grow, scientists, engineers and policymakers will need to figure out how everyone can effectively share the limited range of radio frequencies. One solution that astronomers have been working on for the past few years is to create a facility where astronomers and engineers can test new technologies to prevent radio interference from blocking out the night sky.

Such a zone doesn’t exist yet, but our team and many people across the U.S. are working to refine the concept so that radio astronomy, Earth-sensing satellites and government and commercial wireless systems can find ways to share the precious natural resource that is the radio spectrum.

[ANS thanks The Conversation for the above information]

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+ The Secure Space Act (HR 675) would prohibit the FCC from granting satellite licenses to foreign entities the U.S. deems a threat to national security or domestic supply chains.

+ Launch Communications Act (HR 682) would streamline the process for accessing certain spectrum for performing commercial spacecraft launches and reentries.

+ Precision Agriculture Satellite Connectivity Act (HR 1339) would compel the FCC would to review rule changes that could help promote space-based communications for the agriculture market.

+ Advanced, Local Emergency Response Telecommunications Parity Act (HR 1353) would facilitate the use of satellites as providers of connectivity for emergency services in areas hit by natural disasters or otherwise lacking wireless communications.

[ANS thanks SpaceNews for the above information]

AMSAT-INDIA Participates in Science Carnival

To celebrate National Day of India on February 28 one of the biggest Science Carnival 2023 was organised by Gujarat state - India at prestigious Science City Ahmedabad during 28th February to 4th March 2023.

AMSAT-INDIA was specially invited to participate in this biggest scientific exhibition for mass awareness on Amateur Radio & Satellite Communication!

AMSAT-INDIA Regional Coordinator Rajesh Vagadia VU2EXP & team member Sakshi Vagadia VU3EXP did huge efforts to mass promote AMSAT activities amongst all sort of visitors which includes young kids, school-college students, budding engineers, IT Programmers, general public, professionals from various industries, scientists from renowned organization like ISRO, PRL, IPR, VSSE, ISR, officers from BSF, Police, Fire dept and citizens from every walk of life! More than 100,000 visitors were reported and grabbed the opportunity to visit science carnival 2023 and our Science exhibition during 5 days.

AMSAT-INDIA stall was spacious & decent sized at 3m x 3m, it was a big attraction at the center of the Science Exhibition. With well prepared different informative Banners on AMSAT-INDIA, Various Satellite Activities, Amateur Radio Satellite chronology, ARISS Student outreach program, ARISS SSTV event, Question submission for our upcoming ARISS student outreach program etc was absolutely eye catching from a distance.

For the curious visitors we tried to highlight every aspect of our hobby and exhibited all sorts of Radio stuff, Documents, QSL Cards, Books, Ham License, Awards, Project articles, Tracking software, SSTV software, SDR Software, Cube Satellite models etc to give bit idea of our hobby.

Experiencing various amateur radio gear, satellite antenna & test instruments were highly appreciated by visiting budding engineers from a number of colleges at AMSAT-INDIA stall. Some of the stuff we displayed include; Dual band Arrow-II antenna, dual band Yagi, tape measure antenna, GP, Telescopic antenna for SDR, Radios includes Icom IC-705 with LiFePO4 battery pack, Kenwood VHF base, half dozen of VHF/UHF HTs, RTL-SDR setup, LDG ATU, NanoVNA, Morse Key, cw oscillator, Paddle, electronic keyer, SWR/Power meter, Cable, Connectors etc. It made our task easy to explain the use of each stuff according to the visitors' query.

We came across various types of queries like how to be a Ham, Procedure to

get license, Types of Amateur Radio satellites, operating modes, setting up ground station, how to receive ISS SSTV images, how to establish satellite contact etc. We made a humble attempt to answer & satisfy all of those queries. We enjoyed a very detailed discussion with students/groups who already know about Amateur Radio and always need to learn more on Satellite Communication.

We also highlighted contributions of worldwide AMSAT organizations, IARU, ARISS, RSGB, ARRL and our ARSI & GIAR. I also mark a note on an author and my teacher Mr. Nagendra Vijay of popular Gujarati Science magazine named 'Scope' who did tremendous efforts to introduce Ham Radio in Gujarat (India) 40 years back and still continue to create awareness via it's leading Science magazine 'Safari', his stall was just after a row.

Our AMSAT-INDIA stall were visited by many well-wisher GIAR Ham friends including VU2CPV Pravinbhai, VU2JGI Jagdishbhai, VU2MJP Manojbhai, VU2SPF Bhatnagarji, VU3APY Asheshbhai, VU3VDC Vitthhalbhai, VU3GLY Priyesh, VU3WHO Snehal etc.

It was a great experience for us to spend the whole 5 days enjoying talking & explaining our favorite hobby Amateur Radio & Satellite Communication!

We were happy to present amateur radio as a scientific hobby & experimenting platform for diversified fields and not just emergency communication tools!

Lots of positive & appreciating feedback we received in the visitor feedback book.

We are thankful to Science Carnival 2023 Organiser Dr. Vrajesh Parikh, Pulkesh Prajapati, Dr. Narotam Sahoo & team for inviting us for this prestigious Science Carnival Exhibition. I also thank our AMSAT-INDIA Secretary Mr Nitin Muttin VU3TYG, Director Educational B. A. Subramani VU2WMY, President Ramesh Ramsubbu VU2RMS & committee for complete guidance and support extended to us.

I specially thank team member Sakshi Vagadia VU3EXP & my XYL Kiran Vagadia for supporting and assisting me all the time during the 5 day exhibition.

I am optimistic to see the next generation taking keen interest in Amateur Radio & Satellites from VU Land.

[ANS thanks Rajesh Vagadia, VU2EXP, for the above information]

ISS Dodges Commercial Imaging Satellite

The International Space Station adjusted its orbit March 6 to avoid a close approach by an imaging satellite operated by Satellogic, the latest evidence of growing congestion in low Earth orbit.

NASA said in a March 6 blog post that the Progress MS-22 spacecraft docked to the station fired its thrusters for a little more than six minutes, raising the station’s orbit to move out of the way of what the agency called an Earth observation satellite. According to Roscosmos, the maneuver, lasting 375.8 seconds, changed the station’s velocity by 0.7 meters per second.

NASA spokesperson Sandra Jones told SpaceNews March 7 that the spacecraft would have approached within about 2.7 kilometers of the station without the maneuver. She did not identify the satellite involved in the close approach to the station other than an “Argentine earth observation satellite launched in 2020.” Other sources said the satellite was NuSat-17,

also called NewSat-17, one of 10 satellites launched in November 2020 by Satellogic, headquartered in Buenos Aires.

A Satellogic spokesperson said late March 7 it received a conjunction data message, or CDM, from the 18th Space Defense Squadron, the Space Force unit that handles space situational awareness activities, about this close approach.

The orbit of NewSat-17 and the other nine satellites launched in 2020 have been gradually decaying, and are now crossing the orbital altitude of the ISS. That is an increasing concern for ISS operations as it and other Earth observation satellites typically operate in higher sun-synchronous orbits that will decay if not actively deorbited at the end of the missions.

The March 6 maneuver, NASA said, will not affect upcoming spacecraft going to and from the station. However, amateurs using the ARISS repeaters will want to be sure to have updated Keplerian elements that take the new orbit into account.

[ANS thanks SpaceNews for the above information]

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Following conclusion of undocking coverage, NASA coverage of Crew-5's return will continue with audio only, and full coverage will resume at the start of the splashdown broadcast. Real-time audio between Crew-5 and flight controllers at NASA's Mission Audio stream will remain available and includes conversations with astronauts aboard the International Space Station and a live video feed from the orbiting laboratory.

The Dragon spacecraft, named Endurance by the agency's SpaceX Crew-3 astronauts on its maiden voyage, will autonomously undock, depart the space station, and splash down Saturday at one of seven targeted landing zones in the Atlantic Ocean or Gulf of Mexico off the coast of Florida. The spacecraft also will return time-sensitive research to Earth.

[ANS thanks NASA for the above information]

ARISS NEWS

Amateurs and others around the world may listen in on contacts between amateurs operating in schools and allowing students to interact with astronauts and cosmonauts aboard the International Space Station. The downlink frequency on which to listen is 145.800 MHz worldwide.

RECENTLY COMPLETED:
Jumeirah College Dubai, Dubai, United Arab Emirates, telebridge via VK4KHZ. The ISS callsign was NA1SS. The ARISS mentor was Ferrario Gianpietro, IZ2GOJ. Contact was successful: Tue 2023-03-07 08:45:03 UTC 27 degrees elevation. Congratulations to the Jumeirah College Dubai students, Sultan AlNeyadi KI5VTV, telebridge station VK4KHZ, and mentor IZ2GOJ! This was the first ARISS contact for Sultan AlNeyadi, KI5VTV.

The latest information on the operation mode can be found at https://www.ariss.org/current-status-of-iss-stations.html

The latest list of frequencies in use can be found at https://www.ariss.org/contact-the-iss.html

[ANS thanks Charlie Sufana, AJ9N, one of the ARISS operation team mentors for the above information]

Upcoming Satellite Operations

David Bartholomew, AD7DB, will activate FM satellites from DM31 on Saturday, March 18. He may also pop up in DM23 and or DM22 on March 17 and March 19. Follow him on Twitter for updates @ad7db.

If YOU know of anything that should be here, please submit any additions or corrections to k5zm (at) comcast (dot) net.

[ANS thanks Ian Parsons, K5ZM, AMSAT rover page manager, for the above information]

Hamfests, Conventions, Maker Faires, and Other Events

AMSAT Ambassadors provide presentations, demonstrate communicating through amateur satellites, and host information tables at club meetings, hamfests, conventions, maker faires, and other events.

+ 2023 CubeSat Developer's Workshop

April 24-27, 2023
California Polytechnic State University
1 Grand Avenue, San Luis Obispo, California 93407
https://www.cubesatdw.org/

+ AMSAT Ambassador Clint Bradford, K6LCS, has a Zoom presentation scheduled with Thames Valley ARC, England on May 11, 2023.

Think a 90-minute lively, informative, and fun “How to Work the Easy Satellites” Zoom presentation would be appropriate for your convention or club? Always included are overviews of the ARRL, AMSAT, and ARISS. And pre-presentation questions are welcome. Contact Clint Bradford, K6LCS, at https://www.work-sat.com/

[ANS thanks the AMSAT Events page for the above information]

Satellite Shorts From All Over

+ NASA and SpaceX are targeting 23:30 UTC Tuesday, March 14, to launch the company’s 27th commercial resupply mission to the International Space Station. Liftoff will be from Launch Complex 39A at the NASA’s Kennedy Space Center in Florida. Launch timing is dependent upon the undocking and return of NASA’s SpaceX Crew-5. Live launch coverage will air on NASA Television, the NASA app, and the agency’s website at: https://www.nasa.gov/live (ANS thanks NASA for the above information)

+ The White House is proposing a $27.2 billion budget for NASA in fiscal year 2024 that would include increased funding for Artemis and starting work on a tug to deorbit the International Space Station. The Biden administration’s budget framework, released March 9, proposed increasing NASA’s budget by 7% from the nearly $25.4 billion the agency received in fiscal year 2023, roughly keeping pace with inflation. (ANS thanks SpaceNews for the above information)

+ China has been dropping hints about its Long March 9 (CZ-9) rocket, a three-stage super-heavy variant of the Long March family. This launch vehicle will reportedly be capable of transporting up to 150,000 kg (16.5 tons) to Low Earth Orbit (LEO) and 54,000 kg (59.5 tons) to a trans-lunar injection. On March 2nd, the China Academy of Launch Vehicle Technology (CALT) announced (via the Chinese social media platform Weixin) that it had finished building the first propellant tank for the CZ-9. (ANS thanks Universe Today for the above information)

+ After a decade in development, JAXA & Mitsubishi Heavy Industries’ medium-lift H3 rocket, an upgraded and lower cost (around $50M vs $90M per launch) version of their H2-A launch vehicle, finally took off. Unfortunately, second-stage ignition failed and flight controllers were forced to terminate the mission. The self-destruct sequence took JAXA’s ALOS-3 along with it -- a high-resolution optical Earth Observation satellite which would have had a ground resolution of 0.8 m. (ANS thanks The Orbital Index for the above information)

+ The Amateur Radio on the International Space Station (ARISS) Program is seeking U.S.education institutions and organizations to host an Amateur Radio contact with a crew member on board the ISS in the first half of 2024. The deadline to submit a proposal is March 31st, 2023. See https://www.ariss.org/ for details. (ANS thanks ARISS for the above information)

Join AMSAT today at https://launch.amsat.org/

In addition to regular membership, AMSAT offers membership to:

* Societies (a recognized group, clubs or organization).
* Primary and secondary school students are eligible for membership at one-half the standard yearly rate.
* Post-secondary school students enrolled in at least half time status shall be eligible for the student rate for a maximum of 6 post-secondary years in this status.
* Memberships are available for annual and lifetime terms.

Contact info [at] amsat.org for additional membership information.

73 and remember to help Keep Amateur Radio in Space!

This week's ANS Editor, Mark Johns, KØJM
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